

### **Amendments to the Drawings**

The attached sheets of drawings include changes to Figs. 1 and 2 and improvements in the quality of all Figs. These sheets, which include Figs. 1-4, replace the original sheets including Figs. 1-4. In Fig. 1, element 12 has been clarified and previously omitted element “filter” has been added. In Fig. 2, elements 20 and 24 have been clarified, including dimensional markers, and previously omitted element designation “14” added.

Attachment:      Replacement Sheets  
                         Annotated Sheets showing changes

## **REMARKS**

Applicants appreciate the time taken by the Examiner to review Applicants' present application. This application has been carefully reviewed in light of the Official Action mailed October 4, 2004. Applicants believe that this application is in condition for allowance and respectfully request allowance of Claims 1-84.

### **Objections to the Drawings**

The Examiner objected to the drawings "because the quality of Figures 1 and 4 are extremely poor, it is virtually impossible to determine what is intended to be shown: Figure 2 is improperly oriented, as the indicia would not be right side up if the figure were rotated to the right by 90 degrees; in all Figures, the indicia are blurry and not evenly dark." Further, the Examiner objected to the drawings under 37 CFR 1.83(a) as not showing every feature of the invention as specified in the claims. Applicants have amended all the Figures to improve their quality and otherwise comply with the requirements of 37 CFR 1.121(d) and 37 CFR 1.83(a). Applicants have included in this response Replacements Sheets including Figures 1-4, and Annotated Sheets showing the changes to Figures 1-4.

### **Rejections under 35 U.S.C. § 101**

The Examiner rejected claims 22, 23, 49, 50, 77 and 78 under 35 U.S.C. 101 "because the claimed invention is directed to non-statutory subject matter. The tissue of the surgical environment is a part of the body." Applicants respectfully disagree with the Examiner and traverse this rejection. Applicants are not claiming the tissue of the surgical environment, but rather a polymer matrix having an index of refraction approximately equal to that of the surgical environment in which the polymer matrix is placed. Nevertheless, Applicants have amended claims 22, 23, 49, 50, 77 and 78 to more clearly claim Applicants' invention and overcome this rejection.

### **Rejections under 35 U.S.C. § 112**

The Examiner rejected claims 1-84 under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. Applicants respectfully disagree with the Examiner and traverse this rejection. The Examiner provides a number of examples of elements the Examiner believes are not enablingly described in the specification; however, Applicants respectfully submit that to a person having average skill in the art of wide-angle illuminators, the elements pointed out by the Examiner are in fact enablingly described. Applicants respectfully point out the detailed description in its entirety as describing not only what one of average skill in the art would require to practice the invention as claimed without undue experimentation, but that further provide explicit details as to how to achieve the optical element claimed by Applicants (see specification, pages 13-15). Applicants therefore respectfully request that Examiner remove this rejection and allow claims 1-84.

The Examiner rejected claims 1-23, 49, 50, 77 and 78 under 35 U.S.C. 112, second paragraph, as “being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” In particular, the Examiner rejects claims 1-29 as “indefinite because the preamble of the claim is of a different scope than the body thereof, in that the preamble merely recites an optical element and the body of the claim recites for example such elements as an optical fiber; optical cable; cannula; and light source, which are not properly parts of the optical element. Applicants respectfully disagree with and traverse this rejection. As a first point, Claim 1 recites purely elements of the optical element of the preamble and hence is a proper and patentable independent claim. Claims 2-29 then add further limitations, directed to additional elements that cooperate with the optical element of claim 1, that positionally relate the optical element of claim 1, or otherwise properly add limitations to the invention as claimed in claim 1. Applicants therefore respectfully submit that the Examiner’s rejection is improper and request Examiner to remove this rejection and allow claims 1-23.

The Examiner also rejected claims 22, 23, 49, 50, 77 and 78 as indefinite because “they fail to further limit the claim from which they depend, as they recite the surgical environment, which is not properly part of the device and therefore what further limitation is intended to be implied is unclear.” Applicants respectfully disagree with the Examiner and traverse this rejection. Claims 22, 23, 49, 50, 77 and 78, as currently amended in response to Examiner 35 U.S.C. 101 rejection of this same office action clearly add the additional limitation to each of their respective base claims of a polymer matrix having an index of

refraction that is approximately index-matched to the index of refraction of an environment of the surgical field, and in particular, to the index of refraction of the interior of the eye. The applicants are not claiming the surgical environment, but instead claim a polymer matrix having the additional limitation of a particular refractive index. The Examiner's rejection is therefore improper and Applicants respectfully request the Examiner remove this rejection and allow claims 22, 23, 49, 50, 77 and 78.

The Examiner also rejected claims 30-56 and 57-84 as "indefinite because what the difference is between these claim sets is unclear." As a first point here, Applicants do not understand the essence of the Examiner's rejection and request clarification. In particular, which set of claims, 30-56, or 57-84 is unclear? If the issue is, how are the claim sets different, as opposed to one or the other being indefinite, Applicants respectfully submit that the claim set comprising claims 30-56 is directed to, as claimed by Applicants in independent claim 30, a wide-angle illuminator that is operable to receive light from a light source, whereas the claim set comprising claims 57-84 is directed to, as claimed by Applicants in independent claim 57, a wide-angle illumination surgical system that includes its own light source. The purpose of the individual claim sets is to allow Applicants to fully claim their invention, just as one might claim not only a video processor, but also a video system incorporating the video processor. Applicants therefore respectfully submit that the Examiner's rejection is improper and request the Examiner remove this rejection and allow claims 30-56 and 57-84. Applicants have also amended claims 30 and 57 to more clearly and fully claim their invention.

#### **Rejections under 35 U.S.C. § 102**

The Examiner rejected claim 1 under 35 U.S.C. 102 (b) as being clearly anticipated by Hemphill (U.S. Patent No. 3,720,827). Applicants respectfully traverse this rejection. Applicants do not understand why the Examiner believes Hemphill to clearly anticipate Applicants' invention as claimed. Hemphill is directed to a decorative foam plastic lens for a luminaire comprising a pattern on at least one surface of the lens (see Hemphill, claim 1 and columns 1-3. To clearly anticipate Applicants' invention, Hemphill must teach all of the elements of Applicants invention as claimed, and nowhere does Hemphill teach or suggest a small-gauge optical element comprising a polymer matrix having a plurality of micro-bubbles

displaced within the polymer matrix for receiving a light beam and scattering the light beam to illuminate a surgical field. Hemphill is so far removed from the art of Applicants' invention that Applicants are at a loss as to how it teaches *any* element of Applicants' invention, much less as to how it clearly anticipates the whole invention as claimed. Applicants respectfully request that Examiner remove this rejection and allow claim 1.

### **Rejections under 35 U.S.C. § 103**

The Examiner rejected claims 1-11, 22-38, 49-66 and 77-84 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,624,438 issued to Turner ("Turner") in combination with U.S. Patent No. 6,096,028 issued to Bahmanyar, et al. ("Bahmanyar") and U.S. Patent No. 6,365,871 issued to Knowles, et al. ("Knowles"). The Examiner states that "Turner teaches a device as claimed except for the use of microlenses per se; a circular or semi-ellipsoidal surface; the optical cable comprising two SMA connectors; the microlenses being 1 to 50 microns in diameter; and the optical element being 2 millimeters long. Bahmanyar et al teach the equivalence of microlenses and holographic elements, the use of connecting cables with multiple fibers and two SMA connectors. Knowles et al teach that microbubbles function as microlenses. It would have been obvious to the artisan of ordinary skill to employ microlenses in the place of the holographic element of Turner, since these are equivalents, as taught by Bahmanyar et al; to form the microlenses as microbubbles, since microbubbles are known in the art of optics to behave in this manner, as taught by Knowles et al, and to form the optical element to have a circular or semi-ellipsoidal surface, to be 2 millimeters long, so as to not unduly enlarge the device, and to have microbubbles between 1 micron and 50 microns in diameter, so as to render the microbubbles small enough to enable the light beam to interact with a large number of them, and since these features are well known in the art; are well within the scope of one having ordinary skill in the art, and provide no unexpected result, thus producing a device and method such as claimed."

Applicants respectfully disagree with the Examiner. Neither Turner, Bahmanyar, nor Knowles, nor any combination of the three, teaches Applicants' invention as claimed in independent claims 1, 30 and 57. In particular, Turner teaches away from an optical element as claimed by Applicants in that Turner teaches the use of a "holograph surface relief of random micro-lenses" as a first surface of a transparent material at the distal end of a support

tube (cannula) of an illuminator. Applicants' optical element, by contrast, comprises a plurality of microbubbles displaced within a polymer matrix, and not just on one surface of the optical element. The Examiner's assertion that Turner teaches a device as claimed by Applicants is thus incorrect. Because Turner does not teach or suggest the combination claimed by Applicants, there is no motivation to combine Turner with any other art. Independent claims 1, 30 and 57 thus cannot be rendered obvious by Turner either alone, or in combination with any other art. In this regard, Applicant respectfully points out that in order to combine references for an obviousness rejection, there must be some teaching, suggestion or incentives supporting the combination. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989). The mere fact that the prior art could be modified does not make that modification obvious unless the prior art suggests the desirability of the modification. *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). In addition, it is well established that Applicant's disclosure cannot be used to reconstruct Applicant's invention from individual pieces found in separate, isolated references. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988).

Applicants respectfully submit that not only do Turner, Bahmanyar, or Knowles not disclose Applicants' invention as claimed, either alone or in combination with one another, but there is no motivation, teaching or suggestion to combine Turner with Bahmanyar or Knowles, or vice-versa. The rejection on a combination of these references is thus inappropriate. Applicants therefore respectfully request withdrawal of the rejection and allowance of independent Claims 1, 30 and 57. Claims 2-11 and 22-29 depend from independent claim 1, and as such each is patentably distinct and allowable as a further limitation upon Claim 1. Claims 31-38, and 49-56 depend from independent claim 30, and as such each is patentably distinct and allowable as a further limitation upon Claim 30. Claims 58-66 and 77-84 depend from independent claim 57, and as such each is patentably distinct and allowable as a further limitation upon Claim 57. Therefore, Applicants respectfully request the Examiner withdraw the rejection and allow claims 1-11, 22-38, 49-66 and 77-84.

The Examiner rejected claims 12-18, 39-45, and 67-73 under 35 U.S.C. 103(a) as being unpatentable over Turner in combination with Bahmanyar and Knowles as applied to claims 1-11, 22-38, 49-66 and 77-84 above, and further in combination with U.S. Patent Application No. 4,865,029 issued to Pankratov, et al. ("Pankratov"). For the same reasons

given above as to the rejection of claims 1-11, 22-38, 49-66 and 77-84, Applicants respectfully submit that this rejection on a combination of these references is improper and request the Examiner remove the rejection and allow claims 12-18, 39-45, and 67-73.

The Examiner rejected claims 19-21, 46-48, and 74-76 under 35 U.S.C. 103(a) as being unpatentable over Turner in combination with Bahmanyar and Knowles as applied to claims 1-11, 22-38, 49-66 and 77-84 above, and further in combination with U.S. Patent Application No. 4,607,622 issued to Fritch, et al. ("Fritch"). For the same reasons given above as to the rejection of claims 1-11, 22-38, 49-66 and 77-84, Applicants respectfully submit that this rejection on a combination of these references is improper and request the Examiner remove the rejection and allow claims 19-21, 46-48, and 74-76.

### CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request full allowance of Claims 1-84.

An extension of three (3) months is requested and a Notification of Extension of Time Under 37 C.F.R. § 1.136 with the appropriate fee is attached hereto.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present invention.

Respectfully submitted,

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Date

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Fig. 1

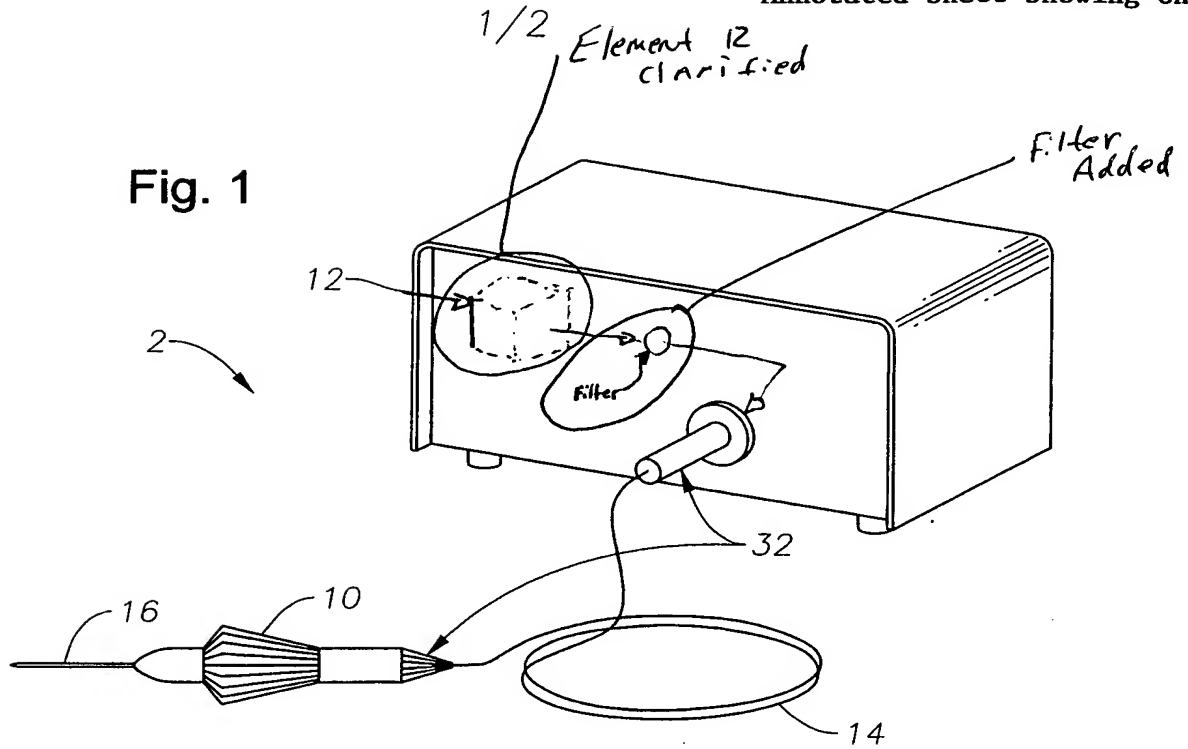


Fig. 2

